

What Is Claimed Is:

1. An assay apparatus, comprising:

a temperature adjusting means for simultaneously adjusting a temperature

5 of a plurality of samples in accordance with a pre-determined temperature profile;

and

a receiving means for receiving spectral emission from the samples while
the temperature of the samples is adjusted in accordance with the temperature
profile.

10 2. The apparatus of claim 1, wherein said receiving means receives

fluorescent emission.

3. The apparatus of claim 1, wherein said receiving means receives

ultraviolet light.

15 4. The apparatus of claim 1, wherein said receiving means receives

visible light.

5. The apparatus of claim 1, wherein said temperature adjusting

means comprises:

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a temperature adjusting element for adjusting the temperature of said heat conducting block.

6. The apparatus of claim 1, wherein said temperature adjusting means comprises:

5 a heat conducting block;

an adaptor disposed on said heat conducting block, wherein said adaptor is configured to receive a container containing the plurality of samples; and
a temperature adjusting element for adjusting the temperature of said heat conducting block.

10 7. The apparatus of claim 1, further comprising:

a movable platform;

wherein said temperature adjusting means comprises a heat conducting block having a plurality of wells formed therein, each of said plurality of wells configured to receive a container containing one of the plurality of samples;

15 wherein said movable platform is configured to receive a plurality of said heat conducting blocks; and

a temperature adjusting element for adjusting the temperature of said heat conducting block.

8. The apparatus of claim 1, further comprising:

a movable platform;

wherein said temperature adjusting means comprises a heat conducting block adapted to receive a container containing the plurality of samples, wherein
5 said movable platform is configured to receive a plurality of said heat conducting blocks; and

a temperature adjusting element for adjusting the temperature of said heat conducting block.

9. The apparatus of claim 8, wherein said movable platform is a
10 translatable platform.

10. The apparatus of claim 8, wherein said movable platform is a
rotatable platform.

11. The apparatus of claim 1, wherein said receiving means is
configured to receive spectral emission from the plurality of samples one sample
15 at a time.

12. The apparatus of claim 1, wherein said receiving means is
configured to simultaneously receive spectral emission from more than one
sample of the plurality of samples.

13. The apparatus of claim 1, wherein said receiving means is configured to simultaneously receive spectral emission from all of the plurality of samples.

5 14. The apparatus of claim 6, wherein said temperature adjusting means means further comprises:

a temperature controller for changing the temperature of said heat conducting block in accordance with the pre-determined temperature profile.

10 15. The apparatus of claim 7, wherein said temperature adjusting means comprises:

a temperature controller for changing the temperature of said heat conducting block in accordance with the pre-determined temperature profile.

15 16. The apparatus of claim 8, wherein said receiving means comprises:
a light source for emitting an excitatory wavelength of light for the samples; and

a sensor for detecting the spectral emission from the samples in response to the excitatory wavelength of light.

17. The apparatus of claim 1, wherein said receiving means comprises a photomultiplier tube.

18. The apparatus of claim 2, wherein said receiving means comprises a fluorescence scanner.

19. The apparatus of claim 2, wherein said receiving means comprises a fluorescence scanner.

20. The apparatus of claim 11, wherein said receiving means comprises a fluorescence scanner.

21. The apparatus of claim 12, wherein said receiving means comprises a fluorescence scanner.

22. The apparatus of claim 1, wherein said receiving means comprises a charge coupled device.

23. The apparatus of claim 13, wherein said receiving means comprises a fluorescence imaging camera.

24. The apparatus of claim 22, wherein said receiving means comprises a CCD fluorescence imaging camera.

25. The apparatus of claim 1, wherein said receiving means comprises a diode array.

26. An assay apparatus, comprising:

a movable platform;

a plurality of heat conducting blocks disposed on said platform, wherein each of said plurality of heat conducting blocks is adapted to receive a plurality of samples;

5 a light source for emitting an excitatory wavelength of light for the samples;

a temperature adjusting means for adjusting the temperature of said heat conducting blocks, thereby adjusting the temperature of the samples;

10 a sensor for detecting the spectral emission from the samples in response to the excitatory wavelength of light; and

wherein said movable platform is moved between heat conducting blocks to sequentially detect spectral emission from the samples in each of said plurality of heat conducting blocks.

15 27. The apparatus to claim 26, wherein said movable platform is a translatable platform.

28. The apparatus of claim 26, wherein said movable platform is a rotatable platform.

29. The apparatus of claim 26, wherein each of said plurality of heat conducting blocks has a plurality of wells formed therein, each of said plurality of wells configured to receive a container containing one of the plurality of samples.

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30. The apparatus of claim 26, wherein each of said plurality of heat conducting blocks is adapted to receive a container containing the plurality of samples.

31. The apparatus of claim 26, wherein said temperature adjusting means comprises:

10 a temperature controller for changing the temperature of said heat conducting blocks in accordance with a pre-determined temperature profile.

32. The apparatus of claim 26, wherein said sensor comprises a
15 photomultiplier tube.

33. The apparatus of claim 26, wherein said sensor comprises a fluorescence scanner.

34. The apparatus of claim 33, wherein said fluorescence scanner is configured to scan the plurality of samples one sample at a time.

35. The apparatus of claim 33, wherein said fluorescence scanner is configured to simultaneously scan a subset of at least two of the plurality of samples.

5 36. The apparatus of claim 33, wherein said receiving means is configured to simultaneously receive spectral emission from all of the plurality of samples.

37. The apparatus of claim 36, wherein said receiving means comprises a fluorescence imaging camera.

10 38. The apparatus of claim 26, wherein said sensor comprises a charge-coupled device.

39. The apparatus of claim 38, wherein said sensor comprises a charge-coupled device camera.

15 40. The apparatus of claim 26, wherein said sensor comprises a diode array.

41. The apparatus of claim 37, wherein said fluorescence imaging camera is configured to simultaneously scan all of the plurality of samples in one of said heat conducting blocks.

42 The apparatus of claim 37, wherein said fluorescence imaging camera is configured to simultaneously scan all of the plurality of samples in all of said plurality heat conducting blocks.

5 43 The apparatus of claim 39, wherein said charged coupled device camera is configured to simultaneously scan all of the plurality of samples in one of said heat conducting blocks.

10 44. The apparatus of claim 39, wherein said charge coupled device camera is configured to simultaneously scan all of the plurality of samples in all of said plurality heat conducting blocks.

45. The apparatus of claim 26, wherein at least one sample of the plurality of samples comprises a biological polymer.

46. The apparatus of claim 26, wherein at least one sample of the plurality of samples comprises a protein.

15 47. The apparatus of claim 26, wherein at least one sample of the plurality of samples comprises a nucleic acid.

48. The apparatus of claim 1, further comprising:
a computer controller for controlling the operation of said temperature
adjusting means.

5 49. The apparatus of claim 14, wherein said temperature controller
comprises a processor.

50. The apparatus of claim 15, wherein said temperature controller
comprises a processor.

51. The apparatus of claim 31, wherein said temperature controller
comprises a processor.

10 52. The apparatus of claim 26, wherein said temperature adjusting
means independently adjusts the temperature of each of said heat conducting
blocks.

15 53. An assay apparatus, comprising:
a heating means for simultaneously heating a plurality of samples; and
a receiving means for receiving spectral emission from the samples while
the samples are being heated.